AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A programming device comprising:

a group of program generation tools to generate programs for each of a plurality of devices that form part of ~~forming of~~ a control system for controlling a group of machines; and

a data sharing unit adapted to share a variable name and attribute data definitions corresponding to an object of each of said plurality of devices ~~for a program generation~~,

wherein the objects are shared by said program generation tools.

2. (currently amended): The programming device according to claim 1, wherein programming action in one of the program generation tools ~~is~~ acts as a trigger to store a setting of the object to the data sharing unit together with an indication of the program generation tools which is a reference object, and

the sharing of said object with ~~other~~ program generation tools other than said one of the program generation tools notifies said object to the program generation tools other than said one of the program generation tools ~~which is the reference object~~.

3. (currently amended): The programming device according to claim 1, further comprising an object data definition unit adapted to perform data definition and data changing of the objects shar~~inged~~ in the data sharing unit,

wherein ~~said object management is totally managed~~ all objects involved in the object sharing are totally managed.

4. (currently amended): The programming device according to claim 1, further comprising:

a system configuration tool, being registered with a subset of said objects, ~~already registered with some objects, as basic types~~, said subset of said objects being basic type objects having a high ~~frequencies~~ frequency of use in the devices in the control system, the system configuration tool ~~for selecting from~~ being adapted to select an object from the ~~the~~ ~~registered~~ basic types objects ~~an object~~ to be actually used in the control system.

5. (currently amended): A programming device comprising a group of program generation tools for generating programs for each of a plurality of devices ~~constructing~~ forming part of a control system for controlling a group of machines,

wherein one of the program generation tools performs data definition of a variable name and attribute data corresponding to an object in each of said devices forming part of a control system for controlling a group of machines, and whereby the variable name and attribute data corresponding to said object are stored to enable to be used by ~~other~~ program generation tools other than said one of the program generation tools.

6. (currently amended): The programming device according to claim 5, wherein ~~in case of storing the variable name and attribute data corresponding to the object~~ information about, whether or not the object is referenced by ~~other~~ program generation tools other than said one of the program generation tools is registered and

the object is notified to the program generation tools other than said one of the program generation tools ~~which is the reference object~~.

7. (currently amended): The programming device according to claim 6, further comprising a detection unit adapted to detect any overlap ~~with objects at~~ a referenced part ~~when a~~ among the objects when a program is generated by ~~other~~ the program generation tools other than said one of the program generation tools.

8. (currently amended): The programming device according to claim 6, wherein when an object in a first program generation tool from the group of program generation tools is changed ~~in a basis of a~~ by a second ~~particular~~ program generation tool from the group of program generation tools, the changed object is notified to the ~~program generation tools which is the reference object~~ first program generation tool.

9. (original): The programming device according to claim 6, wherein the object is notified to a storage area which is confirmed by the program generation tools when they are started.

10. (currently amended): A programming method for generating programs for devices ~~constructing a~~ forming part of a control system to control a group of machines, the method comprising ~~the steps of~~:

according to a pre-designed virtual object, defining an object name and attribute data corresponding to an object of each of the devices forming part of a control system to control a group of machines, specifying a device that will use ~~using~~ the object, and registering the information in a data sharing unit;

notifying the object to a program generation tool for the specified devices ~~using~~ that will use the object; and

according to the objects registered in the data sharing unit, performing programming of the device by the notified program generation tools.